

CLAIMS

1. A light emitting apparatus comprising: an aluminum nitride co-fired substrate;
and a light emitting device arranged on a front surface of the co-fired substrate,

5 wherein the front surface of the aluminum nitride substrate, on which the light
emitting device is arranged, is mirror-polished so as to have a surface roughness of
0.3 μm Ra or less, and

wherein the light emitting apparatus further comprises a vapor-deposited metal
film and via holes, the vapor-deposited metal film being arranged on the front surface
10 of the aluminum nitride substrate around the light emitting device and having a
reflectivity of 90% or more with respect to light emitted from the light emitting device,
and the via holes penetrating the aluminum nitride substrate from the front surface,
on which the light emitting device is arranged, to the rear surface of the substrate to
thereby allow conduction to the light emitting device from the rear surface.

15 2. The light emitting apparatus according to claim 1, wherein the vapor-deposited
metal film comprises aluminum or silver.

3. The light emitting apparatus according to claim 1, comprising a LED chip as the
20 light emitting device and further comprising at least one peripheral component
arranged on the aluminum nitride substrate and selected from the group consisting of
diodes for inhibiting reverse current, resistances, and thermistors.

4. The light emitting apparatus according to claim 1, wherein the aluminum nitride
25 substrate carrying the light emitting device has a surface roughness of 0.1 μm Ra or
less.

5. The light emitting apparatus according to claim 1, wherein the light emitting device is mounted on the aluminum nitride substrate by a flip chip assembly technique.

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6. The light emitting apparatus according to claim 1, wherein a white resist film is arranged on an exposed front surface of the aluminum nitride substrate other than a region where the vapor-deposited metal film is arranged.

10 7. The light emitting apparatus according to claim 6, wherein the resist film comprises a solder resist ink and is formed by screen printing method.